Things are changing with the Summer Conference. So quickly in fact, it’s hard to say what will be the state of affairs by the time you read this here newspaper article, yet, there is exciting news to report that we know will be true when you do. We’re moving the NOFA Summer Conference to the virtual world. Yes, the conference is happening but will now take place online from July 20 – August 9th via a myriad of Zoom and other streaming services.

What does this mean? Well, for one, it means you can sit on your couch, hang out in your kitchen, relax in your garden, your bedroom, wherever you wish and take part in the NOFA Summer Conference program.

For 46 years the NOFA Summer Conference has delivered a robust collection of experienced farmers and gardeners to shed light on their latest and greatest insights, innovations and tried and true tactics that help them succeed. In the virtual form, the program will maintain its reliably informative nature and will represent presenters from all over the Northeast. We have re-formed the program into 60 workshops, plus our keynote session with our already scheduled keynote speaker, Tim LaSalle from Chico State University. Tim will be joining us from California via livestream and we are happy he is still joining us to continue the discussion on the immeasurable benefits of soil biology.

The main platform for the conference will be Zoom (we know you are Zooming it up already!) and we will be mixing in other opportunities to engage with each other, take part in raffles, enjoy entertainment and have fun on Zoom and other platforms. We’ve been brainstorming dance parties, children’s programming, puppet shows, live music, chat rooms and more and can’t wait to iron out those details.

Part of the silver lining from this unexpected turn of events will be the amount of workshop access you will be able to have in the virtual world. Instead of being able to absorb 8-12 workshops over a conference weekend, your registration will now give you access to all 60. Yes. For the first time ever, (cue the voiceover actor) we will be recording the entire NOFA Summer Conference and the sessions will be yours for viewing at your leisure.

Another part of the silver lining is the accessibility to those of you unable to make it to Amherst, MA in August each year. If you can’t make it to the NOFA Summer Conference because of the distance, you’re in luck this year. If you love the conference but typically can’t make it work with your fabulous summer social schedule, you’re in luck this year. If you wish you could have the NOFA Summer Conference workshop program at your fingertips to experience on demand, whenever you choose, you too are in luck this year and can bring live NOFA programming into your home for three weeks this summer.

We’ve established the admission fees for NOFA members at $100 for access to all workshops and post conference recordings. Scholarships are available too.

Registration is now open and more program details are posted on our website: nofasummer-conference.org

We hope you’ll register to join us in this adventure and that you have a safe summer and productive garden this year.

Tim LaSalle, 2020 keynoter

Inside This Issue
Letters to the Editor A- 2
Editorial A- 4
News Notes A- 5
Book Reviews A- 9
Section B:
Supplement on Invasive Species
Dear Jack,

I still have fond memories of being at your place when your kids were little and NOFA/Mass was just getting started. And thank you so much for all the great articles in The Natural Farmer over all the intervening years. You’ve done a great job with every subject, elegantly demystifying and educating in a relatively small printed space.

While growing up I was never very impressed by the results of marijuana use I saw all around me, and so was never interested in using it myself. But for many decades I saw it mainly as a personal freedom issue. I have benefitted enormously from the near absence of authoritarian controls and restraints on the beekeeping industry as I developed my apiary over three decades. The methods I used to guide my apiary to a place where the bees and their various diseases and parasites could live together without treatments of any kind would be illegal in countries like Germany and Austria, where correspondingly very little progress has been made. Why shouldn’t individuals be able to grow their own pot and experiment with it themselves if they aren’t hurting anyone else?

Living in Vermont for many years has been a great opportunity to watch the effects of THC on people of all ages and vocations; to watch what happens to young people as they start to use it, and as pot has become stronger and stronger. My neighbor claims that 80% of Vermonters over twelve years old smoke pot, and I’m willing to admit that his estimate could be close to the truth. Remember that best-of-all radio show “Car Talk”? Whenever Tom and Ray were comparing the New England states, all they would say about my state is: “In Vermont everyone is on drugs.”

I tried so hard for many decades to be laissez-faire about the whole thing, but after watching the same insidious and destructive process go on in the same manner over and over and over again, I finally had to just give up and scream: “This is the stupidest thing I have seen in 65 years of being alive!” The people I know who claim that pot helps their arthritis can barely walk; those who believe it helps them with anxiety are paranoid. We need people to replace the ones using it to “stay young” are aging right on schedule; and in our local group of organic farmers, a majority of the heavy users have had some sort of cancer, while all the rest remain somehow unscathed.

Though I never tried to coerce my two “adopted” boys in any way over their decision to smoke or not, pot still managed to destroy the bonds of honesty and trust between us. My own trade (commercial beekeeping) in Vermont has been, since the mid-seventies, joined at the hip with the pot and drug culture; and during that time has been set back by one whole generation at least.

The most heartbreaking thing is to watch people of all ages—but especially young people—change when they start smoking the modern super-strong pot, and almost immediately start losing their humility, compassion, moral compass and ability. The insidious part is that it makes them feel greatly enhanced at the same time, and entitled to other people’s time, energy, resources and connections without doing much of anything to earn them. It may be a drug for feeling great, but it is also a drug for sociopaths-in-training and the gradual deterioration of society. There’s a far superior form of happiness available through clear thinking, humility, awareness and ability; better for both the individual, humanity and all forms of life.

Self-reliance and struggling through your own difficulties are the real basis of generosity and compassion. You really do have to be able to take care of yourself first before you can be of genuine help to others, and not just stealing that help from someone else or borrowing it from the future. Alcohol interrupts clear thinking, ability and morality temporarily, but marijuana short-circuits them in a permanent way, and this is why I think it is a far worse problem.

People like to point out the achievements of high-functioning, enthusiastic pot users. After watching and knowing some of them over many years, I am convinced of only one thing: that every single one of them could have achieved far more without it. They were super-capable to begin with, and pot diminished them just like it does everyone else. There are many smokers who can do one thing or another very well; but often putting the pieces together for a genuinely healthy, self-supporting and useful life is way beyond them. The result of this is blunted in Vermont, where there is so much unearned income—another insidious drug that, along with modern electronics, have many of the same effects. We need people to replace all of their abilities in order to solve the very serious, unprecedented problems we face now.
In spite of all this, I’m not opposed to legalization and/or people growing their own – anything that might reduce the horrible violence in Mexico and Central America I’ve been there and seen the results of exactly the same aims and methods used by our local drug culture, applied to a society with more poor people, fewer jobs and fewer resources than we have. The result is a complete disaster. We’re a big part of that disaster, and we’re at the beginning stages of exactly the same thing right here. Everyone has to decide for themselves whether to participate or not – there’s no way to legislate this any more. To make a huge understatement, you could say that my opinions of the marijuana culture are in the minority now. Nothing showed this more clearly than the recent announcement by the U. S. Surgeon General that all minds are negatively affected by modern marijuana, and not just young ones – and the nearly non-existent news coverage it generated.

I have a young friend who has Crone’s Disease and has started using marijuana to treat it. I sincerely hope that it will help him overcome what can be a devastating condition; And I would be the very last person to try to interfere with his right to grow or obtain this medicine. He has already suffered some of the usual effects; but maybe in this case it will be worth it. If, on balance, he genuinely benefits from using this drug, it will be the first time I’ve seen it happen. For me, trying to find someone who unambiguously benefits from using marijuana has been like searching for the Ivory-Billed Woodpecker: I know they must be out there somewhere, but so far I haven’t seen them.

Thanks again, Jack, for your great, and usually well balanced reporting. In this case, I think you neglected an important point of view. Best wishes to you and your family.

Kirk Webster, Middlebury, VT

Hi Kirk,

You are indeed a voice from many years ago! Glad to hear from you, that you have continued to love and work with bees, and that you have liked this journal over the years.

I appreciate your speaking eloquently with regard to your concerns about marijuana use and human potential. I have never been much attracted to pot either, and perhaps for that reason have not much studied people who are active users. I suspect that in this area, though, as in most of life, the rule of the golden mean applies: If you foreswear or avidly partake in any belief, substance, or approach to life, you are probably missing some essential meaning, important nuance, or redeeming humor.

I saw that issue more focused on raising and working with the cannabinoid hemp as an agricultural product than on consuming its cousin marijuana for pleasure. The former seems a valid topic for an agricultural journal, especially when talking about organic methods. The latter, to my mind, is none of our business.

I should note, however, that I think your treatment of those who seek cannabinoids for relief from pain or other health reasons is a little harsh. The reason some of us with arthritis seek relief through hemp oil is the fact that the disease has progressed to the point that we can barely walk because of the pain in our joints. It does not seem kind or intelligent to dismiss their real suffering as you do. (Full disclosure: I am increasingly one of those afflicted; it runs in my family and my choices are not great. Julie’s CBD salve is very helpful.)

Thanks again for the clear expression of your views on THC and its impact on us all! — Jack Kittredge

Please help us thank these Friends of Organic Farming for their generous support!
Thoughts on the Pandemic

by Jack Kittredge

I suspect I share the reactions of many TNF readers to this pandemic. Fortunately, Julie and I do not know anyone who has been seriously infected with the coronavirus, and our livelihoods are not impacted by the economic shutdown that so many have experienced. Farming has been declared essential and our work for NOFA was always done at home.

But this crisis has shown all of us that Nature has the final say. She has been a tolerant mother, generously giving us whatever of her treasures we asked for—despoiling her air, privatizing her water, mining her soil. But, never sated, we always pressed for more.

Now it seems that we may have transgressed too far, crowding our fellow living creatures into cages, pens and CAFOs for our consumption, raising them without sunlight or space or fresh air. In their misery they have succumbed to disease, allowing new contagions to thrive, evolve and finally escape out into our world.

Is social distancing working? Can the curve be flattened? Will the world we knew return? I don’t think we can yet say. This is all too new, too much information is unavailable. But there are a few things which I think we have learned:

First, no one can deny the simple power of Nature. When she is displeased, all the might and
ture. When she is displeased, all the might and

Second, this crisis did not come from outer space. It has been predicted for years, years dur-
ing which the warnings went unheeded, prepa-
rations neglected. We have been poorly served by our leadership, all of it.

Third, we have all been born with a precious gift --- an immune system -- which is designed to save us from exactly this threat. But that immune system needs to be supported with proper nutrients and not assaulted by toxic chemicals. It arises from the gut biome, which can be fatally damaged by poisons like glyphosate (see issue 123). Among other things it requires lots of sunlight to make cholesterol into vitamin D (see issue 126) -- whose lack has been so obvi-
ous and flagrant in the terrible infection rates of northern hemisphere countries versus southern hemisphere ones this spring. Is the reason no one in power is raising these questions because there is no profit in good health?

Fourth, awakened individuals are responding to this pandemic with resolve to do better. The tidal wave of consumer interest in gardening, local food, CSAs, farmers markets and farm stands has surprised all of us. It gives us an opportunity we haven’t had since the 1989 Alar scare to challenge the global food system: to show how chasing convenience and price has been at the cost of food quality and our health, how we need to take personal responsibility for what we put in our mouths.

Fifth, I find it personally ironic that the life so many of us have chosen, to eschew the fast

The international food system, with its chemi-
cals and its CAFOs and its corporations, could find ways to patch this together another few years. But life is nothing if not persistent, and infectious organisms seem very much alive. We have uncorked a genie here which will not

We can choose a path which leads to further distancing from life and its senses --- commu-
nicating electronically, working in isolation, estranged from our food, sanitising our social

events.

Or the wiser minds among us might realize we must adapt to Nature. We must learn good man-
ners, which means the same in matters large or small -- restraint for the self, respect and gener-
osity for the other.

Can we embrace the flesh and blood we are, live to excel at good health, start to undo the
damage we have done?

It is for us to choose the path we wish to follow.
The US Department of Agriculture (USDA) has released their official rules revising federal regulation of genetically engineered (GE) organisms. Under the new federal rules, USDA has significantly reduced its regulatory responsibility for GE organisms. Instead, industry developers will be able to "self-determine" whether or not their engineered plant products should be subjected to regulatory review and undergo environmental risk assessment. The "SECURE" rule also exempts new GE seeds from regulatory review if they contain plant-trait combinations previously approved by the agency or if they were produced through gene-editing techniques and are considered unlikely to pose a plant pest risk.

Jim Goodman, organic farmer and National Family Farm Coalition board president, said: "USDA could have adopted a regulatory approach that sought to ensure that any deregulated GMOs and their accompanying pesticides would not cause harm, yet their published rule states that public comments focused on concerns around pesticide overuse, habitat and biodiversity destruction, and the creation of more herbicide-resistant weeds were outside the scope of this rulemaking process and USDA's Animal and Plant Health Inspection Service (APHIS) authority. It is not outside their authority, but like the U.S. government in general, USDA promotes the interests of the biotechnology industry over the best interests of community and environmental health.

Why? That’s easy — the biotechnology industry has a high profit margin and knows how to influence government policy and regulatory oversight. Farmers and everyone else will pay the price.

Dana Perls, Friends of the Earth Food and Technology Program Manager, also expressed concern regarding USDA's SECURE rule:

"The USDA’s shameful decision to gut essential safety regulations for genetically engineered organisms puts more power in the hands of corporate agribusiness and removes all transparency. Under no circumstances should polluting industries be allowed to skirt regulations and rubber-stamp themselves as ‘safe.’ Genetically engineered organisms and seeds pose serious environmental risks and further entrench us in an industrial agriculture model that is bad for farmers, consumers and the planet. Now, more than ever, we must prioritize public health and our environment, not corporate agribusiness' bottom line."

source: National Family Farm Coalition press release, May 19, 2020

EPA Grants First Permit to Test Genetically Modified Mosquitoes

Testing could start this summer in Florida Keys. Second test would be in heavily populated Houston.

The EPA granted permission for genetically engineered mosquitoes to be released into the Florida Keys and around Houston to see if they can help limit the spread of mosquito-borne illnesses. British biotech company Oxitec Ltd was granted an experimental use permit to release a genetically engineered type of the mosquito species Aedes aegypti, which is a known vector of Zika virus and viruses that cause yellow fever and dengue fever, the Environmental Protection Agency office of Chemical Safety and Pollution announced. Oxitec must get state and local approval before it can start field testing. But if granted, testing will take place over a two-year period in Monroe County, Fla., starting this summer, and in Harris County, Texas, beginning in 2021. Oxitec says its “2nd Generation Friendly” Aedes aegypti carries a gene that prevents female offspring from surviving, allowing for male-only production.

Jaydee Hanson, policy director at the Washington, D.C.-based Center for Food Safety, questioned Oxitec’s claims and warned of possible dangers. "Most (but not all) of the GE mosquitoes’ offspring die at the late larval stage, in the water where the female mosquitoes lay their eggs," Hanson wrote. “This partial survival rate, even if low (a reported 3 to 4% in laboratory conditions), would lead to the establishment of hybrid mosquitoes in the environment, which might possess altered properties, including the potential for enhanced disease transmission or resistance to insecticides.”

Monroe County, Fla., with a population of about 75,000, includes the Florida Keys and mostly uninhabited areas of the Florida Everglades. But Harris County, Texas, which includes the city of Houston, is among the country’s most populous counties, with more than 4 million people.

source: Bloomberglaw.com, May 1, 2020

Washington State Supreme Court Reinstates $18 Million Penalty Against Grocery Manufacturers Association

The Washington state Supreme Court has reinstated an $18 million judgment and penalty against the Grocery Manufacturers Association (GMA) for intentionally shielding names of food companies contributing millions to defeat a Washington ballot initiative. The GMA strategically violated our voter-approved campaign.

The Washington state Supreme Court has reinstated an $18 million judgment and penalty against the Grocery Manufacturers Association (GMA) for intentionally shielding names of food companies contributing millions to defeat a Washington ballot initiative. The GMA masqueraded opposition to Initiative 522, a 2013 ballot initiative that would have required labeling of genetically modified foods and seeds sold in Washington stores. Internal documents and meeting notes, obtained by the state Attorney General’s office, revealed how the Association had set up a “Defense of Brands Strategic Account” account. Major food companies funneled $14 million to the account, with the GMA using $11 million of the money in the “No on 522” campaign.

“The (supreme) court ruled that the Grocery Manufacturers Association, an association of large corporations, including PepsiCo, Inc., Nestle USA and the Coca Cola Company, intentionally violated our voter-approved campaign finance transparency law. GMA’s unlawful conduct was intentional — and unprecedented.”
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The purpose of the “Defense of Brands” account was made clear in notes from a GMA executive committee meeting, that it would “shield individual companies from public disclosure and possible criticism.” Major food companies and agribusiness firms had just spent $47 million to defeat a similar initiative in California. The big bucks included $1.6 million from PepsiCo, more than $1 million from Coca-Cola and Nestle, and more than $500,000 from General Mills. The money spoke as the state’s voters narrowly rejected I-522.

As he is empowered to do under law, Ferguson sought treble damages arguing that the GMA’s violation of campaign laws was flagrant and intentional. In November of 2016, Thurston County Superior Court Judge Anne Hirsch agreed that the GMA’s actions were intentional. She tripled GMA’s $6 million penalty to $18 million. Almost two years later, the state Court of Appeals upheld the $6 million penalty, but not the tripling.

In its ruling Thursday, the Washington Supreme Court reinstated the $18 million penalty and remanded the case back to the Court of Appeals. source: SeattlePI.com, April 16, 2020

EPA Suspends Enforcement of Environmental Laws

The U.S. Environmental Protection Agency has announced that in the midst of the COVID-19 pandemic, the agency would be suspending enforcement of environmental laws. The agency had been under pressure from several industries, including the oil industry, to suspend enforcement of a number of environmental regulations due to the pandemic before this announcement was made, with several industries also asking for extensions on deadlines to meet various environmental goals outlined in legal settlements they had signed with EPA.

EPA Administrator Andrew Wheeler shared in a statement on the suspension that the reasoning behind the decision was that EPA “recognizes challenges resulting from efforts to protect workers and the public from COVID-19 may directly impact the ability of regulated facilities to meet all federal regulatory requirements.”

However, the memo signed by the Administrator goes far beyond what industry was even asking for — the statement does not even protect companies who are short-staffed because they’re working to keep their employees safe and at home. But chemical plants and other facilities that are continuing to operate right now should also be able to comply with environmental laws. source: panna.org, April 17, 2020

Bayer Settles False Ad Lawsuits

Bayer AG agreed to pay $39.5 million to settle allegations that its Monsanto unit ran misleading ads about the controversial Roundup weed-killer and its potential health risks to humans and animals. As part of the deal, language will be removed from Roundup Weed and Grass Killer’s label saying that glyphosate -- the product’s active ingredient -- only affects an enzyme found in plants. Consumers alleged that the chemical attacks an enzyme found in humans and some animals. The settlement comes as Bayer is feverishly working to resolve more than 13,000 lawsuits blaming exposure to glyphosate in Roundup for cancer in users. The company denies glyphosate causes cancer.

After losing three cancer trials in California that resulted in combined damages of $191 million, Bayer agreed to postpone the next round of Roundup trials to provide more time for negotiations. At least a half-dozen trials scheduled to start in the first quarter of this year have been put on hold. Bayer is appealing jurors’ Roundup verdicts against the company. Bayer shares fell under siege after the company acquired Monsanto in June 2018, losing as much as 47% of their value as trial losses mounted and new cases multiplied. The stock price began edging up again with the prospect of a settlement drawing closer, yet such an agreement might still cost Bayer $10 billion to $12 billion, according analysts at Bloomberg Intelligence. source: Bloomberg, March 30, 2020

Farmers and Nonprofits Sue Trump’s USDA Over Organic Soil-Less Loophole

The Center for Food Safety (CFS), with a coalition of organic farms and stakeholders, has filed a lawsuit challenging the United States Department of Agriculture’s (USDA’s) decision to allow hydroponic operations to be certified as organic. The suit claims such operations violate organic standards by failing to build healthy soils, and seeks to stop USDA from allowing hydroponically-produced crops to be sold under the USDA Organic label.

The plaintiff coalition includes some of the longest-standing organic farms in the United States including Swanton Berry Farm, Full Belly Farm, Durst Organic Growers, Terra Firma Farm, Jacobs Farm del Cabo, and Long Wind Farm, in addition to organic stakeholders organizations including organic certifier OneCert and the Maine Organic Farmers and Gardeners Association.

“Healthy soil is the foundation of organic farming,” said Andrew Kimbrell, executive director of plaintiff Center for Food Safety. “Organic farmers and consumers believe that the Organic label means not just growing food in soil, but improving the fertility of that soil. USDA’s loophole for corporate hydroponics to be sold under the Organic label guts the very essence of ‘Organic’.”

Hydroponic operations, or “hydroponics,” describes methods of growing crops using water-based nutrient solutions without any soil. CFS’s lawsuit cites the federal Organic Foods Production Act, which requires farms to build soil fertility in order to be certified organic. Hydroponics cannot comply with federal organic standards because hydroponic crops are not grown in soil. “The federal organic law unequivocally requires organic production to promote soil fertility,” said Sylvia Wu, senior attorney at the Center for Food Safety and counsel for plaintiffs. “USDA’s decision to allow mega-hydroponic operations that do nothing with soil to be sold as ‘Organic’ violates the law.”

Improving soil fertility and promoting ecological balance are the bedrock of organic food production. “Healthy soil is critical to producing nutrient-dense foods that benefit both people and the environment,” said Paul Muller, one of the farm owners of plaintiff Full Belly Farm in Guinda, California, a diversified family farm that has been farmed organically since 1985. “Healthy soil increases and improves the availability of soil nutrients and beneficial microorganisms, and enhances the land’s ability to sequester carbon and retain nutrients and water.”

Scientists and government agencies agree that building soil health is a critical piece of climate resiliency. When soils are healthy, they can serve as carbon sinks to store and reduce atmospheric carbon. Healthy soils can also retain more water, reducing runoff and erosion. “While I welcome the work that my friends in the hydroponic industry are doing, hydroponic production does not conform to the soil-building precepts of organic farming,” said Jim Cochran, owner of plaintiff Swanton Berry Farm, one of the oldest certified organic strawberry farms in California. “It would be perfectly happy to have my strawberries compete with properly distinguished hydroponically-grown strawberries, without the latter piggybacking on an Organic label that has taken more than 30 years to develop and establish in the minds of consumers. Certifying hydroponically-grown crops as organic devalues that label.”

Since coming into office, the Trump administration has made its intent to gut organic standards clear. Allowing hydroponics to be certified organic is another attempt to weaken
The Natural Farmer  Summer, 2020

the integrity of the Organic label, and has resulted in market confusion and inconsistent organic certifications.

“The USDA’s claim that hydroponics can be certified as organic is disingenuous and false,” said Sam Welsch, president of plaintiff organic certifier OneCert, Inc. “Until the USDA started telling certifiers that they could ignore the parts of the law and rules that required fertility to come from organic matter in soil, no one was certifying hydroponic systems as organic.”

Organic agriculture has always been based on principles of improving soil fertility and promoting ecological balance. The National Organic Standards Board (NOSB), the expert body assigned by Congress to advise USDA on organic matters, has repeatedly called on USDA to prohibit organic certification of hydroponics, but USDA has ignored that recommendation.

As a result of USDA’s inaction, CFS filed a legal petition in January 2019 formally asking USDA to prohibit hydroponic operations from the Certified Organic label on the basis that they do not fulfill the national organic standard of contributing to soil health, but USDA denied the petition’s requests later that year. The lawsuit filed today states that USDA’s rationale for denying the 2019 petition is arbitrary, capricious, and contrary to our federal organic law.

The lawsuit filed today states that USDA’s rationale for denying the 2019 petition is arbitrary, capricious, and contrary to our federal organic law. This is not the first time USDA has bent to the will of “corporate Organics” in diluting organic standards. In 2016, CFS won a groundbreaking lawsuit closing a loophole that was permitting some organic operations to use compost contaminated with pesticides. CFS is currently leading a lawsuit challenging the Trump administration’s rollback of vital organic rules that set standards for organic livestock care, such as adequate space and outdoor access. The challenged loophole for hydroponic operations would eliminate any need for organic farming to involve working with nature.

“The Maine Organic Farmers and Gardeners Association has been active for nearly 50 years in the creation, and implementation of strong organic standards, which are based on building healthy soil. We were involved in the writing of the Organic Food Productions Act, and our members expect the certified organic label to remain true to its intent of creating healthy food from healthy soil,” said Sarah Alexander, executive director of plaintiff Maine Organic Farmers and Gardeners Association.

source: Center for Food Safety press release, March 3, 2020

Bayer’s Roundup Woes May Force It to Sell Assets or Borrow

Bayer AG acknowledged for the first time that lawsuits related to the controversial weed killer Roundup could force it to sell assets, issue new equity or borrow money at unfavorable terms. In its annual report 2/26/20, Bayer said that it “may incur considerable financial disadvantages” from pending suits as well as future cases from U.S. plaintiffs who say the herbicide causes cancer. Bayer says it’s too early to determine whether any of the worst-case scenarios described in the report will materialize.

Shares are down 31% since Bayer closed the $63 billion takeover of Monsanto, which brought it Roundup. That’s led investors to criticize the acquisition’s rationale and raised questions about whether Baumann will ultimately keep his job. The stock fell as much as 4.1% in Frankfurt trading 2/26/20. Bayer is now facing 48,600 U.S. plaintiffs, up from 42,700 in October, the company said as it reported full-year earnings. A surge could derail the settlement process.

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“The number of cases is a real problem in getting the litigation resolved,” Brent Wisner, a lawyer for some of the plaintiffs, said in an email before Bayer provided updated figures. “If we cannot make a deal very soon, this whole settlement process will fall apart.” Wisner said Bayer has dangled the prospect of bankruptcy for Monsanto, which could result in plaintiffs receiving pennies on the dollar for their claims. Bayer declined to comment on this.

In July, Bayer reported lawsuits from 18,400 plaintiffs linking Roundup to cancer -- a figure that by October had more than doubled. Last month, the mediator handling settlement negotiations said that the volume of cases at the heart of the talks may have increased beyond 85,000. Bayer called the figure “speculative,” and has instead focused on the number of cases that have already been served.

source: GEAN press release, 2/27/20

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Big Farms Make Big Flu: Dispatches on Infectious Disease, Agribusiness, and the Nature of Science
by Rob Wallace
published by Monthly Review Press
copyright 2016, 456 pages, paperback, $38.76
review by Jack Kittredge

When I saw this book I knew I had to read it. Although published in 2016, long before the Corona Virus jumped species and created such havoc in our world, I suspected that the tale it tells of the evolution of viruses like our current nemesis is an all too common one.

Rob Wallace is a serious journalist. An evolutionary biologist and public health phylogeographer (one who studies the historical processes responsible for the contemporary geographic distributions of individuals), he is presently at the Institute for Global Studies at the University of Minnesota. Wallace has consulted for the Food and Agriculture Organization of the United Nations and the Centers for Disease Control and Prevention, and is co-author of Neoliberal Ebola: Modeling Disease Emergence from Finance to Forest and Farm, and of Clear-Cutting Disease Control: Capital-Led Deforestation, Public Health Austerity, and Vector-Borne Infection.

So why don’t I like this book more? Rather than a narrative about the evolution of virulent influenzas such as Covid-19 among factory farmed animals, it is a collection of reports from his website (blogs, really). As he puts it: “Some of the pieces were written with a public audience in mind. Some were mere notes dashed to myself.” Too many, I’m afraid, were in the latter category.

The book badly needs a consistent thread. Wallace clearly believes that the growth of concentrated animal feeding operations (CAFOs) and the mismanagement of their filth, concentration, and poor ventilation have fueled the growth of deadly diseases, and those “zoonotic” diseases (those pertaining to animals but transferable to humans) are jumping species barriers to bring infection and pandemic to humans. But instead of simply narrating this development, the book uses a microscope to follow disease outbreaks in Chinese CAFOs and the efforts of local authorities to cover them up. But for me such behavior is not shocking, it is expected, and a microscope is the wrong lens -- too much detail and not enough big picture. I would prefer a much wider angle.
That said, let me try to cover some of the points Wallace stresses:

1) Southern China is a historical hot spot for disease evolution because of the intense concentration of hog and poultry agriculture in CAFOs there. In the last 30 years in Guangdong and Hong Kong SARS, H1N1, and H5N1 were among the area’s contributions to epidemic history.

2) There is a relationship between disease virulence and transmission. A disease must be virulent enough to infect the number of hosts that guarantee its transmission, but if too virulent it will promptly kill the host before it has a chance to transmit the infection via coughing, sneezing, or physical contact.

3) As long as susceptible hosts exist, their supply will enable voracious strains to compete without cutting off their own transmission chains.

Pretty clearly it is the concentration in CAFOs that makes them so dangerous. It turns out that space is expensive and things like sunlight, fresh air, and distance from another creature’s excretions would make feedlot animals too costly for our global cheap food system. As Wallace prophetically puts it:

For the long term, we must end the livestock industry as we know it. Influenzas now emerge by way of a globalized network of corporate feedlot production and trade, wherever specific strains first evolve. With flocks and herds whisked from region to region—transforming special distance into just-in-time expediency—multiple strains of influenza are continually introduced into localities filled with populations of susceptible animals. Such domino exposure may serve as the fuel for the evolution of viral virulence.

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enough to keep up with the changes afoot.

In all of this, Pearce comes across as a reasoned and informed voice from his time researching and writing about environmental and development issues. The story has an optimism for the potential of the "new wild", a landscape where nature has the ability to claw back its own space and renew its own path of evolution and discovery. There are many cases already where we’ve seen this happening such as forest species adapting to garlic mustard root chemicals and black ducks feeding on zebra mussels on the St. Lawrence River. The New Wild represents a call for recognizing that we humans can't con

The New Wild is probably the best for someone questioning our ideas around invasive species, and renewing nature's own path of evolution and discovery may well have noticed that Herbal Antivirals as a two volume set, with one dedicated to drug-resistant bacteria, can be ruled out as important contributors to COVID-19-related deaths, a look anew at a book that covers herbal treatments for resistant bacteria, fungi, and protozoa. It could be that coinfections are the norm rather than the exception in deadly diseases.

As I write this (end of April 2020) not enough is known about COVID-19 to say what role secondary bacterial infections might play in the disease's lethality. However, the frequent use in the press of the phrases, “COVID-19 related” and “complications of COVID-19” make me suspicious. But for sure, until such time as secondary bacterial infections, especially those due to increasingly common antibiotic-resistant bacteria, can be ruled out as important contributors to COVID-19-related deaths, a look anew at a book that covers herbal treatments of resistant bacteria, fungi, and protozoa is, in my opinion, timely just as, in my opinion, the review of Herbal Antivirals was timely. In addition, the issue of antibiotic resistance is not just about the current pandemic. COVID-19 might go away, but as long as we have CAFOs and over-prescription of antibiotics, the problem of antibiotic-resistant bacteria will be with us and will likely only get worse.

One might reasonably regard Herbal Antibiotics and Herbal Antivirals as a two volume set, with Herbal Antibiotics being the first volume and therefore the volume tasked with the greater burden of providing an overview of the topics both books address. The two books not only have similar titles and have the same author and publisher, they actually almost look alike. Consequently, I will skip many of the introductory observations for Herbal Antibiotics, 2nd edition: Natural Alternatives for Treating Drug-Resistant Bacteria by Stephen Harrod Buhner published by Storey Publishing 2012, 467 pages, softback, $24.95

Recently, I wrote a review of Buhner’s Herbal Antivirals that appeared in the Spring 2020 issue of The Natural Farmer. Readers of that review may well have noticed that Herbal Antivirals was hardly a new book. Published in 2013, it was already seven years old. The 2nd edition of Herbal Antibiotics (hereinafter I will drop the 2nd edition specification) tops that: Published in 2012, a year before Herbal Antivirals, it is already eight years old. My justification for the earlier review was that a viral pandemic, now known as COVID-19, was gathering force around the world at the time of submission of that review (end of January 2020), so it was appropriate to bring anew to readers’ attention a book that, among other topics, did in fact describe an herbal approach to treating a coronavirus, albeit an older coronavirus that caused an illness known as SARS.

So, what is my justification for reviewing Buhner’s 2012 Herbal Antibiotics at this time, given that my beginner status in herbal medicine has not changed? COVID-19 is due to a virus, not a bacterium. What does a book on herbal approaches to bacterial infections have to do with that? In response, I direct your attention to statements in a 2008 article in the CDC Journal, Emerging Infectious Diseases, titled “Deaths from Bacterial Pneumonia during 1918–19 Influenza Pandemic.” At one point in their article, the authors write:

“Care providers and experts of the day [1918-1919] in epidemiology, pathology, bacteriology, and infectious diseases clearly concurred that pneumonias from secondary bacterial infections caused most deaths during the pandemic.”

To be clear, no one doubts today that the original influenza of 1918-1919 was viral, not bacterial. So antibiotics would not have been effective against the original flu strain. But the concept of “secondary bacterial infection” suggests that although the original influenza could kill by itself, it was more often a “gate-way” illness, producing a path to infection and enabling the deadly bacterial pneumonias. And influenza was not unique in this characteristic. Speaking of measles in nineteenth century England, Anne Hardy, in The Epidemic Streets writes:

“Mild in itself, it [measles] can assume a life-threatening form in certain circumstances, in ‘virgin-soil’ populations, and in the severely undernourished. It also predisposes sufferers to secondary bacterial infections, which may result in permanent hearing and respiratory injury. . . Bronchitis and broncho-pneumonia are damag

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In the growing collection of books and articles questioning our ideas around invasive species, and the complexity of wild nature.

“Nature as a dynamic force will be reborn” (p. 181)

In the growing collection of books and articles questioning our ideas around invasive species, the New Wild is probably the best for someone without extensive science background, and who has eyes open with a desire to truly understand the issue with all its complexity and ambiguity. Other books such as Where Do Camels Belong?, Rambunctious Garden, Beyond the War On Invasive Species and the textbook Invasion Biology by Mark Davis are good reads and worth the efforts. But The New Wild is complete in its ability to tell the story while delving into the science, politics, and history of the issue to deepen our understanding.

Herbal Antivirals, 2nd edition: Natural Alternatives for Treating Drug-Resistant Bacteria

by Stephen Harrod Buhner

published by Storey Publishing

2012, 467 pages, softback, $24.95

review by Gregory Luckman

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al Antibiotics that are duplications of remarks I made for Herbal Antivirals and simply refer you to my earlier review in the Spring 2020 issue of The Natural Farmer. Many of my remarks in the earlier review really apply to both books.

I would like to start with three caveats, all of which apply to both books, but which I did not state before.

First, on the copyright page of both books is the disclaimer,

“This publication is intended to provide educational information for the reader on the covered subject. It is not intended to take the place of personalized medical counseling, diagnosis, and treatment from a trained health professional.”

Similarly, just as I am not a trained herbalist, I am also not a medical professional. My book review is for the information of readers only and it is not intended as medical advice.

The second caveat is perhaps anticipated by a paragraph written by Buhner himself in his discussion of echinacea in the chapter of Herbal Antibiotics entitled “The First Line of Defense: Strengthening the Immune System.” He writes,

“Echinacea is not an immune tonic; it is an immune stimulant. Continued immune stimulation in instances of immune depletion to avoid necessary rest or more healthy lifestyle choices will always result in a more severe illness than if the original colds and flus were allowed to progress. Echinacea should not be used if you are getting sick a lot and are only using echinacea to stave off illness without using the time gained to heal the immune system itself through deep healing and recuperation.”

And critical among healthy lifestyle choices, of course, is healthy nutrition. Despite silence on the issue by public health authorities, my personal view is that healthy nutrition is likely to be more important than frequent hand-washing, wearing masks in public, or so-called social distancing in dealing with the COVID-19 pandemic or with future pandemics. The point is that healthy nutrition and healthy living are the real first line of defense. Even the best of herbal remedies are supportive. I do not think that I need to dwell on this in a book review for readers of The Natural Farmer. But I can assure you that I do not mean to dismiss the primacy of nutrition and other lifestyle factors even though I do not discuss them in reviews of Buhner’s books. And, by the way, echinacea is not even among the most potent of the herbal remedies Buhner discusses.

The third caveat is that many medicinal herbs may well be borderline toxic and can be outright toxic if they are not used properly. This issue shows up in Buhner’s discussion of the berberine-containing plants in the chapter of Herbal Antibiotics entitled “Herbal Antibiotics: The Localized Nonsystemics,” to wit: “There is a tendency, because of the berberine plants’ poor absorption across the intestinal mucosa, to increase the dose of the plants substantially to try to get more into the bloodstream. This is a very bad idea. Abdominal cramping, nervous tremors, and, most importantly, excessive drying of the mucous membranes will occur at high doses. Do not attempt to use these herbs as systemics.”

In other words, damage to the GI tract will occur long before a therapeutic dose of the berberine plants’ constituents is reached in the bloodstream. So the caveat is, there can be problems due to overdoses. Use herbal medicines with care, only in ways that long experience has shaped to provide an understanding of their appropriate use. Statements analogous to the above quote about the berberines occur for several of the plants mentioned in each book. The occurrence of such statements is a notable feature of both books: warnings on what not to do as well as guidance on what to do for the safe usage of herbal medicine.

In Herbal Antibiotics, the foreword to the first edition (1999) by James Duke, PhD. that is reprinted in the second edition, the preface to the second edition, the prologue (titled “Rise of the Superbugs”), and Chapter 1 (titled “The End of Antibiotics”) all function to provide an overview of what the world is facing with antibiotic resistance and emerging superbugs.

Chapter 2, “The Resistant Organisms, the Diseases They Cause, and How to Treat Them,” corresponds to Chapters 2 through 4 of Herbal Antivirals. It starts with ten more pages of overview of what the world is facing, then zooms in to enumerate the types of resistant organisms, divided into three main categories: Gram-positive bacteria, Gram-negative bacteria, and non-bacterial organisms.

Gram-positive bacteria are those whose stain in
The five types of Gram-positive bacteria considered are, in alphabetical order, Clostridium difficile, Enterococcus species, Mycobacterium tuberculosis, Staphylococcus aureus, and Streptococcus species. The thirteen types of Gram-negative bacteria considered are, in alphabetical order: Acinetobacter baumannii, Campylobacter jejuni, pathogenic E. coli strains, Haemophilus influenzae, Klebsiella pneumoniae, Neisseria gonorrhoeae, Proteus species, Pseudomonas aeruginosa, Salmonella species, Seratia marcescens, Shigella species, Stenotrophomonas maltophilia, and Vibrio cholerae. The non-bacterial organisms are Candida species, Plasmodium species (the causative agents of malaria), and Aspergillus species.

Wow! That’s quite a list. Many of the names are widely familiar to the public, especially as foodborne pathogens. Some of the pathogens that are not familiar are likely to be associated with hospital-acquired infections, relevant to the person in the hospital for COVID-19 or for anything else. For each of the twenty-one types of organisms, Chapter 2 provides proposed formulations, dosages, and frequencies of administration of specific herbal remedies. The majority of formulations seem to be tinctures, but there are also some infusions, decoctions, poultices, and essential oil preparations. This manner of presentation might be confusing to someone not familiar with herbal medicine who is reading the book through for the first time from start to finish. The designation, “formulation,” is cryptic to a beginner. One needs to know that the formulations are described in more detail only later in the book, in the sections on individual herbs.

Chapter 3, “About Herbal Antibiotics,” starts with an overview, but this time of medicinal herbs rather than of the emerging resistant organisms. The chapter is only ten pages long, but I believe it contains the essence of the difference in philosophy between Western medicine and the evolving outlook on medicine by much of the world outside of the United States and Western Europe. Much of the world, Buhner suggests, have realized that they cannot rely on a “pharmaceutical/technological medical model as their primary approach to health care.” This leads to research seriously looking for the best plants for any application and for the optimum preparation of those plants for maximum effectiveness. By contrast, in the U.S. researchers often (although not always) assume that an herbal approach is primitive and thus inferior, and present dismissive accounts of herbal medicine based on experiments that are sometimes superficial.

Chapters 4 through 7 of Herbal Antibiotics correspond to Chapters 5 and 6 of Herbal Antivirals, being organized around lists of herbs with specific properties and around specific uses of those herbs. Chapter 4, “Herbal Antibiotics: The Systemics,” discusses Buhner’s choice of five herb genera, a therapeutic subset of whose constituents can cross the intestinal membrane and circulate in the bloodstream throughout the body. This property is essential when treating resistant infections that are similarly spread throughout the body. The five herb genera are Cryptolepis, Sida, Alchornea, Bidens, and Arthemisia. Cryptolepis, Sida and Alchornea all appear to be particularly broad-spectrum in their actions. Sida and Bidens are considered to be invasive species. By contrast, Alchornea is not readily available in the Western world. Buhner states, “Part of the point of listing this wonderful plant here is to stimulate suppliers to import it or for gardeners [or organic farmers!] Don’t forget the organic farmers!] to begin planting it in the United States.

Chapter 5, “Herbal Antibiotics: The Localized Non-systemics,” discusses Buhner’s choice of medicinals that contain constituents that one should assume cannot cross the intestinal membrane, but that can be very effective within the GI tract or for skin infections. These include the berberine-containing plants that Buhner refers to as the Berberines, the junipers, Usnea, and organic wildflower honey. Several of the Berberines are considered to be invasive. The more we use it, the more we love it! — Bryan Landsverk

Chapter 6, “Herbal Antibiotics: The Synergists,” covers plants which might have some anti-bacterial properties of their own, but whose primary action is to increase the effectiveness of other medicinal plants. They do this through several mechanisms that Buhner describes. He briefly mentions 19 different plants, many of which are common garden plants or culinary herbs. He then goes into more detail on three plants in particular: licorice, ginger, and black pepper/piperine.

The notion of synergy between plants seems to me to be an example of the notion of “as below, so above.” Pathogenic organisms are thought not to develop resistance to medicinal plants the way that such organisms develop resistance to antibiotics because the plants use many different secondary compounds, not just one “active ingredient.” It is harder for a pathogen to evolve around different control mechanisms than around the control mechanism of one active ingredient. Synergy between two plants extends this notion, with two or more plants contributing complementary collections of secondary compounds.

Chapter 7, “The First Line of Defense: Strengthening the Immune System,” resembles Chapter 6 of Herbal Antivirals, except that there are eight herbs listed rather than three. They are, in alphabetical order, Ashwagandha, Astragalus, Boneset, Echinacea, Eleuthero, Red Root, Reishi, and Rhodiola.

The discussion of each of the herbs in Chapters 4 through 7 is extensive, including sections on which parts of the plant are used, preparation and dosage, side effects, herb-herb and herb-drug interactions, habitat and appearance, cultivation and collection, medical properties, commercial sources, plant chemistry, traditional uses, and finally, in smaller type font, a description of studies that Buhner found in the worldwide scientific literature. (OK, I did cut and paste most of this paragraph from my review of Herbal Antivirals. But there is a reason for this. The presentation of herbs in the two books is identical, and in both cases, seemingly encyclopedic.)

In Herbal Antivirals there is a twenty-one page appendix on herbal medicine making. Buhner openly states that the appendix is condensed from a more extensive discussion in Herbal Antibiotics, 2nd edition. Well, here it is: Chapter 8, “A Handbook of Herbal Medicine Making,” a forty-seven page discussion.

Some topics such as water infusions and decoctions, alcohol tinctures, and herbal medicine for children are copied almost verbatim into the Herbal Antivirals appendix. What is included in...
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Herbal Antibiotics Chapter 8 that the appendix of Herbal Antivirals lacks is a discussion of harvesting and storing plants, a broader array of water extraction applications such as washes, steams, evaporative concentrates, and percolations; a broader array of alcohol or related substance extractions; oil infusions; salves; lotions; essential oils; and a section on using whole herbs.

In general, these extended topics leave me with the impression that the full Chapter 8 is more suited for the professional herbalist who is more likely to have occasion first to wildcraft or grow herbs and second to use them in a practice extending beyond her or his own family needs. The common topics are nevertheless enough to get the do-it-yourselfers started. For those who would prefer to buy rather than make their own, there is a resource list. As I stated in the earlier review, there are now additional suppliers, some of whom have recently been appearing as vendors at NOFA summer and winter conferences over the past year and a half.

The concerns I expressed about Herbal Antivirals in my earlier review apply as well to Herbal Antibiotics, and there is no need to repeat them here. In addition to those concerns, there is the obvious issue of the age of the books. The plant medicines have not changed, but new diseases are always emerging. COVID-19 is an obvious example. Figuring out an effective herbal approach to such new diseases can ultimately only be done by experience. In the interim, one has to fall back on broad spectrum herbal remedies or look to remedies used for diseases due to similar organisms. Developing a COVID-19 protocol by starting with the formulations for Herbal Antibiotics Chapter 8 that the appendix of Herbal Antivirals lacks is a discussion of harvesting and storing plants, a broader array of water extraction applications such as washes, steams, evaporative concentrates, and percolations; a broader array of alcohol or related substance extractions; oil infusions; salves; lotions; essential oils; and a section on using whole herbs.

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the older SARS is a case in point. I hope that someday someone will undertake an updating of Buhner’s impressive two volumes on herbal antibiotics and antivirals.

I would like to close with some comments on Buhner’s preference for and championing of invasives as medicinal plants. (This is the special issue of The Natural Farmer on invasives, isn’t it?) Buhner concludes his introductory remarks to Chapter 4, “Herbal Antibiotics: The Systemics,” with the words, “While cryptolepis is sometimes hard to find, many of the other herbs in this section are not – at least in the wild. They are often widely distributed throughout the world; a number of them are considered invasive plants, which is a plus. Invasive plants – Earth’s way of insisting that we notice her medicines.”

My apologies here to Buhner and other advocates of Gaia and sacred plant medicine, but I personally look for a scientific (but not reductionist or linear) reason why something occurs. In this case, I ask, why are invasives so well represented among healing plants? My possibly simplistic reasoning is as follows: There are probably no two acres-worth of soil on the Earth that have exactly the same strains of microorganisms. Most microorganisms are beneficial to plants, but there are also many varieties that are pathogenic, and there are many strains of those pathogenic organisms. Plants have learned over millions of years to cope with pathogenic organisms in their environment, mostly through secondary chemical compounds that keep the pathogenics under control.

But the wider the range of a plant, and invasives by definition have a wide range, the greater the variety of strains of pathogenic organisms that the plant needs to control. To thrive over a wide range, a plant has to have secondary compounds that are sufficiently powerful and sufficiently broad spectrum in their actions that they can control all of those different strains of pathogens on whatever acre on whatever continent the plant finds itself.

Now, broad spectrum ability to control soil pathogens is no guarantee that a plant is invasive – ecologies are more complex than that. And a broad spectrum ability to control soil pathogens is no guarantee that a plant’s secondary compounds will also control organisms pathogenic to the human body. But I am just saying that we should not be surprised that invasive plants, with their ability to control many different strains of plant pathogens, are well represented among the plants with medicinal benefits for human beings.

Regardless of the validity of my reasoning on that issue, more dialog on the appropriate use of herbal medicine is needed, with Buhner’s books as valuable source material.
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